

CLAIMS

1. A method of using reflection of a laser ray (LZ, LZ', LZ'') for measuring the thickness (e) of a flat mail item (1) moving through a sorting machine, said method being
5 characterized in that it comprises the following steps:
 - nipping the mail item by means of an elastically deformable member (3; 3', 10) that is movably mounted and that moves with the movement of the mail item, said member having a first surface (4a, 4a') in contact with
10 one face of said mail item, and a reflective second surface (4b; 4b'; 14) substantially parallel to said first surface; and
 - directing the laser ray onto said reflective second surface (4b, 4b', 14) for the purpose of measuring
15 the thickness of the mail item.
2. The method of claim 1, in which the mail item (1) extends in a certain longitudinal direction (D) and in which the laser ray is directed onto said reflective
20 second surface in a direction that is substantially perpendicular to said longitudinal direction (D).
3. Apparatus for using reflection of a laser ray for measuring the thickness (e) of a flat mail item (1)
25 moving through a sorting machine, said apparatus being characterized in that it comprises an elastically deformable member (3; 3', 10) that is movably mounted and that moves with the movement of the mail item (1), said member having a first surface (4a, 4a') in contact with
30 one face of said mail item, and a reflective second surface (4b; 4b'; 14) substantially parallel to said first surface; and in that it further comprises means for directing the laser ray onto said reflective second surface (4b, 4b', 14) for the purpose of measuring the
35 thickness of the mail item.

4. The apparatus of claim 3, in which said member (3; 3') is an elastically deformable wheel that presents an annular tread strip (4a; 4a') in contact with one face of the mail item and, on the side opposite from the tread strip, a reflective annular strip (4b, 4b') which is concentric with the annular tread strip and against which the laser ray is directed.

5. The apparatus of claim 3, in which said member (3, 3') is formed by two elastically deformable wheels disposed on either side of the mail item, each elastically deformable wheel presenting an annular tread strip (4a, 4a') and, on the side opposite from the tread strip, a reflective annular strip (4b, 4b') which is concentric with the annular tread strip, the annular tread strips (4a; 4a') of the two wheels being in contact with respective ones of the two opposite faces of the mail item, and in which two laser rays are directed onto respective ones of the reflective annular strips of the two elastically deformable wheels.

6. Apparatus according to any one of claims 4 to 5, in which each laser ray is guided in a tube (9, 9') provided with bends and provided with mirrors (8A; 8B) inside it.

7. Apparatus according to any one of claims 4 to 6, in which each elastically deformable wheel (3, 3') is a bladed wheel made of an elastomer material and in which the reflective annular strip of the wheel extends from one face of the wheel over a portion of the width of the wheel that is blade-free.

8. The apparatus of claim 3, in which said member is formed by a conveyor belt (10), said conveyor belt (10) having one face in contact with the mail item (1), and, on the side opposite from the face in contact with the

mail item, a face (14) with a reflective surface onto which the laser ray (LZ") is directed.

- 5 9. A postal sorting machine comprising a belt conveyor (6, 6') suitable for moving flat mail items (1) on edge, and apparatus according to any one of claims 4 to 7, disposed such that the tread strip of each elastically deformable wheel (3; 3') is in contact with a conveyor belt.